



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-0022; Project Identifier MCAI-2022-00564-E]

RIN 2120-AA64

Airworthiness Directives; Pratt & Whitney Canada Corporation Turboprop Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Pratt & Whitney Canada Corporation (P&WC) PW308A and PW308C model turboprop engines. This proposed AD was prompted by a manufacturer's design review which identified that the combustion chamber outer case (CCOC) to rear compressor case (RCC) flange bolt low cycle fatigue life was inadequate and that those flange bolts may develop cracks resulting in flange bolt fracture. This proposed AD would require replacing all CCOC flange bolts and modifying the CCOC and inner bypass ducts. This proposed AD would also prohibit installation of certain flange bolts on any affected engine, as specified in a Transport Canada AD, which is proposed for incorporation by reference (IBR). The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this NPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: (202) 493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0022; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

For material that is proposed for IBR in this AD, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; phone: (888) 663-3639; email: AD-CN@tc.gc.ca. You may find this material on the Transport Canada website at tc.canada.ca/en/aviation.

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

FOR FURTHER INFORMATION CONTACT: Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2023-0022; Project Identifier MCAI-2022-00564-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; email: barbara.caufield@faa.gov. Any commentary that

the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

Transport Canada, which is the aviation authority for Canada, has issued Transport Canada AD CF-2022-22, dated April 22, 2022 (referred to after this as “the MCAI”), to correct an unsafe condition on P&WC PW308A model turbofan engines with build specification (BS) BS935 and BS1249, serial numbers PCE-CE0180 and prior, and PW308C model turbofan engines with BS1047 and BS1238, serial numbers PCE-CF0967 and prior. The MCAI states that during a design review, the manufacturer identified that the existing low cycle fatigue life of the flange bolts that secure the CCOC and the RCC is inadequate. As of May 6, 2022 (the effective date of Transport Canada AD CF-2022-22), there have been no reports of cracked flange bolts, however the MCAI states there is potential that cracks could develop on the flange bolt which could lead to fracture of the bolt. The MCAI also states that to address the potential cracking issue, P&WC introduced redesigned flange bolts made of an improved fatigue resistant material. P&WC also introduced revised procedures to modify the CCOC and the inner bypass duct flange with chamfers to reverse the installation direction of the flange bolts. The MCAI specifies installation of the redesigned bolt configuration, modifications to the COCC and inner bypass duct, and specifies an installation prohibition for flange bolts with part numbers MS9698-08 or MS9698-09 on the affected engines. The FAA is proposing this AD to prevent cracking and fracture of the flange bolts which may result in flange separation or case rupture, damage to the engine and damage to the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-0022.

Related Service Information under 1 CFR Part 51

The FAA reviewed Transport Canada AD CF-2022-22, which specifies instructions for replacing certain CCOC flange bolts and modifying the CCOC and inner bypass ducts. Transport Canada AD CF-2022-22 also specifies an installation prohibition for flange bolts with part numbers MS9698-08 and MS9698-09 on the affected engines.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

FAA's Determination

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI described above. The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of these same type designs.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in Transport Canada AD CF-2022-22, described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD and except as discussed under "Differences Between This Proposed AD and the MCAI."

Explanation of Required Compliance Information

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has since coordinated with other manufacturers and CAAs to use this process. As a result, the FAA proposes to incorporate by reference Transport Canada

AD CF-2022-22 in the FAA final rule. This proposed AD would, therefore, require compliance with Transport Canada AD CF-2022-22 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Using common terms that are the same as the heading of a particular section in the Transport Canada AD does not mean that operators need comply only with that section. For example, where the AD requirement refers to “Compliance,” compliance with this AD requirement is not limited to the section titled “Corrective Actions” in Transport Canada AD CF-2022-22. Service information required by the Transport Canada AD for compliance will be available at [regulations.gov](https://www.regulations.gov) by searching for and locating Docket No. FAA-2023-0022 after the FAA final rule is published.

Differences Between this Proposed AD and the MCAI

Where the service information referenced in Transport Canada AD CF-2022-22 requires reporting certain information to the manufacturer, this proposed AD would not require reporting the information to the manufacturer.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 668 engines installed on airplanes of U.S. Registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

| Action | Labor Cost | Parts Cost | Cost per product | Cost on U.S. operators |
|--|--|-------------------|-------------------------|-------------------------------|
| Remove and replace all CCOC flange bolts | 1.5 work-hours x \$85 per hour = \$128 | \$7,742 | \$7,870 | \$5,257,160 |
| Modify the CCOC and inner bypass ducts | 1.5 work-hours x \$85 per hour = \$128 | \$0 | \$128 | \$85,504 |

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Pratt & Whitney Canada Corporation: Docket No. FAA-2023-0022; Project Identifier MCAI-2022-00564-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to:

- (1) Pratt & Whitney Canada (P&WC) PW308A model turbofan engines with build specification (BS) BS935 and BS1249, serial numbers PCE-CE0180 and prior; and
- (2) P&WC PW308C model turbofan engines with BS1047 and BS1238, serial numbers PCE-CF0967 and prior.

(d) Subject

Joint Aircraft Service Component (JASC) Code 7240, Turbine Engine Combustion Section.

(e) Unsafe Condition

This AD was prompted by a manufacturer's design review which identified that the combustion chamber outer case (CCOC) to rear compressor case (RCC) flange bolts low cycle fatigue life was inadequate, and that those flange bolts may develop cracks resulting in flange bolt fracture. The FAA is issuing this AD to prevent cracking and fracture of the flange bolts. The unsafe condition, if not addressed, may result in flange bolt fracture, flange separation or case rupture, damage to the engine and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

Except as specified in paragraphs (h) and (i) of this AD: Perform all required actions within the compliance times specified in, and in accordance with, Transport Canada AD CF-2022-22.

(h) Exceptions to Transport Canada AD CF-2022-22

Where Transport Canada AD CF-2022-22 requires compliance from its effective date, this AD requires using the effective date of this AD.

(i) No Reporting Requirement

Although the service information referenced in Transport Canada AD CF-2022-22 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in § 39.19. In accordance with § 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office,

send it to the attention of the person identified in paragraph (k) of this AD or email to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Additional Information

For more information about this AD, contact Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; email: barbara.caufield@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Transport Canada AD CF-2022-22, dated April 22, 2022.

(ii) [Reserved]

(3) For Transport Canada AD CF-2022-22, contact Transport Canada, Transport Canada National Aircraft Certification, 159 Cleopatra Drive, Nepean, Ontario K1A 0N5, Canada; phone: (888) 663-3639; email: AD-CN@tc.gc.ca; website: tc.canada.ca/en/aviation.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the

availability of this material at NARA, email: fr.inspection@nara.gov, or go to:

www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on January 17, 2023.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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